Claim Amendments

1. (currently amended) A fiber optic cable that comprises:

   (a) at least one optical fiber;

   (b) a primary buffer member circumferentially surrounding each optical fiber;

   (c) optionally, a heat insulating and dimensionally stabilizing member circumferentially surrounding the primary buffer member;

   (d) a secondary buffer member circumferentially surrounding either the primary buffer member or the heat insulating and dimensionally stabilizing member;

   (e) a strength member circumferentially surrounding the secondary buffer member; and

   (f) a dual layer jacket circumferentially surrounding and physically contacting an outer surface of the strength member, which comprises a heat or pressure sealed, low-shrinkage polymer film inner layer, and an outer protective layer.

2. (original) The fiber optic cable of claim 1, wherein the primary buffer member is prepared from a material selected from the group of silicones, acrylic polymers, acrylates and polyimides.

3. (original) The fiber optic cable of claim 2, wherein the primary buffer member is prepared from a material selected from the group of acrylate functional monomers, acrylate functional oligomers, and mixtures thereof.

4. (original) The fiber optic cable of claim 2, wherein the primary buffer member is prepared from a polyimide material.

5. (original) The fiber optic cable of claim 1, wherein the secondary buffer member is prepared from a fluoropolymer material selected from the group of fluorinated ethylene-propylene, polytetrafluoroethylene-perfluoromethylvinylether, perfluoroalkoxy, polytetrafluoroethylene, ethylene-chlorotrifluoroethylene copolymers, ethylene-tetrafluoroethylene copolymers, polyvinylidene fluoride, tetrafluoroethylene-hexafluoropropylene-vinylidene fluoride, polyvinylfluoride resins, and mixtures thereof.

6. (original) The fiber optic cable of claim 5, wherein the secondary buffer member is prepared from a perfluoroalkoxy material.

7. (original) The fiber optic cable of claim 5, wherein the secondary buffer member is prepared from an ethylene-tetrafluoroethylene copolymer.

8. (original) The fiber optic cable of claim 1, wherein the strength member comprises straight, axially extending yarns or fibers that circumferentially surround the secondary buffer member.

9. (original) The fiber optic cable of claim 8, wherein the yarns or fibers are aramid yarns or fibers.

10. (original) The fiber optic cable of claim 1, wherein the strength member is prepared using a fiber-reinforced composite or fabric comprising aromatic polyamide fibers in a resinous matrix.

11. (original) The fiber optic cable of claim 1, wherein the strength member is prepared using a polyimide film.

12. (original) The fiber optic cable of claim 1, wherein the strength member is prepared using a glass fiber-reinforced composite material.

13. (original) The fiber optic cable of claim 1, wherein the polymer film inner layer of the dual layer jacket is prepared using a fluoropolymer film.

14. (original) The fiber optic cable of claim 1, wherein the polymer film inner layer of the dual layer jacket is prepared using a polyimide film having a sealable component coated or laminated onto at least one surface thereof.

15. (original) The fiber optic cable of claim 14, wherein the polyimide film is an aromatic polyimide film.

16. (original) The fiber optic cable of claim 15, wherein the aromatic polyimide film is a polyimide copolymer film derived from the reaction of an aromatic tetracarboxylic acid dianhydride component comprising from 0 to 95 mole % of 3,3',4,4'-biphenyltetracarboxylic dianhydride and from 5 to 100 mole % of pyromellitic dianhydride, and an aromatic diamine component comprising from 25 to 99 mole % of p-phenylene diamine and from 1 to 75 mole % of a diaminodiphenyl ether.

17. (original) The fiber optic cable of claim 14, wherein the sealable component is a heat-sealable adhesive selected from the group of perfluoropolymer, crosslinkable fluoropolymer, and polyimide heat-sealable adhesives.

18. (original) The fiber optic cable of claim 17, wherein the heat-sealable adhesive is a perfluoropolymer adhesive selected from the group of polytetrafluoroethylene, fluorinated ethylene-propylene, perfluoroalkoxy, and tetrafluoroethylene and perfluoromethylvinylether copolymer adhesives.

19. (original) The fiber optic cable of claim 17, wherein the heat-sealable adhesive is a crosslinkable fluoropolymer adhesive selected from the group of ethylene-tetrafluoroethylene and chlorotrifluoroethylene copolymer and terpolymer adhesives, which contain minor amounts of one or more fluorinated comonomers.

20. (original) The fiber optic cable of claim 17, wherein the heat-sealable adhesive is a thermoplastic polyimide adhesive, which softens and becomes fluid at or above 200 °C.

21. (original) The fiber optic cable of claim 1, wherein the polymer film inner layer of the dual layer jacket demonstrates a high temperature (150°C) adhesive bond strength (ASTM 1876-00) ranging from about 100 to about 250 grams per inch-width.

22. (original) The fiber optic cable of claim 14, wherein the polyimide film inner layer of the dual layer jacket demonstrates a high temperature (150°C) adhesive bond strength (ASTM 1876-00) of greater than 1000 grams per inch-width.

23. (original) The fiber optic cable of claim 1, wherein the outer protective layer of the dual layer jacket is prepared using a fluoropolymer material selected from the group of polytetrafluoroethylene-perfluoromethylvinylether, perfluoroalkoxy, polytetrafluoroethylene, ethylene-chlorotrifluoroethylene copolymers, ethylene-tetrafluoroethylene copolymers, fluorinated ethylene-propylene, polyvinylidene fluoride, tetrafluoroethylene-hexafluoropropylene-vinylidene fluoride, polyvinylfluoride resins, and mixtures thereof.

24. (original) The fiber optic cable of claim 23, wherein the fluoropolymer material is a perfluoroalkoxy fluoropolymer.

25. (original) The fiber optic cable of claim 1, wherein the fiber optic cable further comprises a heat insulating and dimensionally stabilizing member that is

prepared from a material selected from the group of aramids, glass, polyesters and polyimides.

26. (original) The fiber optic cable of claim 25, wherein the heat insulating and dimensionally stabilizing member is formed by wrapping an aramid paper tape, in overlapping fashion, along a portion or length of the primary buffer member.

27. (original) The fiber optic cable of claim 25, wherein the heat insulating and dimensionally stabilizing member is formed by spiral wrapping an aromatic polyamide fiber-reinforced polymer composite or fabric, which comprises helically orientated, aromatic polyamide fibers fixed in a resinous matrix, around the primary buffer member.

28. (original) The fiber optic cable of claim 1, wherein the optical fiber(s) is a graded-index, multi-mode optical fiber(s) having a core diameter of approximately 62.5 micrometers and a cladding diameter of approximately 125 micrometers, and wherein the fiber optic cable demonstrates an optical attenuation (EIA/TIA Test Procedure Number 455-3A) of less than about 3.0 decibels per kilometer at 1300 nanometers.

29. (original) The fiber optic cable of claim 28, wherein the fiber optic cable demonstrates an optical attenuation (EIA/TIA Test Procedure Number 455-3A) of less than about 2.0 decibels per kilometer at 1300 nanometers.

30. (original) The fiber optic cable of claim 1, wherein the optical fiber(s) is a single-mode optical fiber(s) having a core diameter of approximately 9 micrometers and a cladding diameter of approximately 125 micrometers, and wherein the fiber optic cable demonstrates an optical attenuation (EIA/TIA Test Procedure Number 455-3A) of less than about 2.5 decibels per kilometer at 1300 nanometers.

31. (original) The fiber optic cable of claim 30, wherein the fiber optic cable demonstrates an optical attenuation (EIA/TIA Test Procedure Number 455-3A) of less than about 1.5 decibels per kilometer at 1300 nanometers.

32. (currently amended) A fiber optic cable that comprises:

(a) at least one optical fiber;

(b) a primary buffer member comprising a polyimide coating circumferentially surrounding the optical fiber(s);

(c) a secondary buffer member comprising a high temperature fluoropolymer extruded around the primary buffer member;

(d) a strength member comprising straight aromatic polyamide fibers axially extending and circumferentially surrounding the secondary buffer member; and

(e) a dual layer jacket circumferentially surrounding and physically contacting an outer surface of the strength member, which comprises ~~comprising~~ a heat-fused, spirally wrapped, low-shrinkage polyimide tape inner layer, and an extruded fluoropolymer outer layer.

33. (original) A fiber optic cable that comprises:

(a) at least one optical fiber;

(b) a primary buffer member comprising an acrylate coating circumferentially surrounding the optical fiber(s);

(c) a heat insulating and dimensionally stabilizing member comprising twisted or helically orientated, aromatic polyamide fibers spirally wrapped around the primary buffer member;

(d) a secondary buffer member comprising a high temperature fluoropolymer extruded around the heat insulating and dimensionally stabilizing member;

(e) a strength member comprising straight aromatic polyamide fibers axially extending and circumferentially surrounding the secondary buffer member; and

(f) a dual layer jacket comprising a heat-fused, spirally wrapped, low-shrinkage polyimide tape inner layer, and an extruded fluoropolymer outer layer.

34. (original) A process for preparing a fiber optic cable, which comprises:

(a) forming a primary buffer member on at least one optical fiber;

(b) optionally, forming a heat insulating and dimensionally stabilizing member on the primary buffer member;

(c) forming a secondary buffer member on either the primary buffer member or the heat insulating and dimensionally stabilizing member;

(d) forming a strength member on the secondary buffer member; and

(e) forming a dual layer jacket on the strength member by

i. wrapping a low-shrinkage polymer film in an overlapping fashion along a portion or length of the strength member,

ii. optionally, heating the low-shrinkage polymer film to a temperature sufficient to cause overlapping regions of the film to bond,

iii. forming an outer protective layer on the inner layer, and

iv. optionally, crosslinking the outer protective layer.